

REMARKS

Upon careful and complete consideration of the Examiner's comments set forth in the final Office Action dated July 16, 2009, as well as in the Advisory Action dated December 15, 2009, applicant has amended the claims which, when considered in conjunction with the comments herein below, are deemed to place the present application into condition for allowance. Favorable reconsideration of this application is earnestly solicited.

Please keep in mind throughout these remarks that the novel premise of the present invention lies in the fact that the claimed method for enhancing the sweetness of an edible product excludes the need of an intense sweetener (as required by the prior art) as the sweetening in accordance with the present invention occurs through the synergistic effect of polydextrose on the sweet tasting sugar compound found in the edible product.

Accordingly, as presently amended, the present invention is now directed to a method for enhancing the sweetness of an edible product containing a sweet tasting sugar compound, comprising adding polydextrose to the edible product which contains a sweet tasting sugar compound, the polydextrose being selected from purified and hydrogenated polydextrose having a pH of 3.5 to 6.5 and an acidity of 0.0003 meq/g or less, said polydextrose being provided in an amount sufficient for synergistically enhancing the sweetness of said sugar compound, wherein said sugar compound is selected from the group consisting of sucrose, fructose, glucose, lactose, maltose, maltulose, isomaltulose, galactose and mixtures or syrups thereof, the synergistic sweetening effect being obtained with polydextrose independently of the presence or absence of intense sweeteners in the product.

The main claim has been amended to be directed to a method for enhancing the sweetness of an edible product containing a sweet tasting sugar compound comprising adding polydextrose to said edible product. Clear support for this can be found on page 4 of the subject specification, lines 5-6 wherein it is stated that “[a] special aspect of the invention is the use of a non-sweet compound for sweetening an edible product which comprises adding polydextrose to an edible product which contains a sweet tasting sugar compound.”

As set forth at the beginning of this response, the novel premise of the present invention lies in the fact that the claimed method for enhancing the sweetness of an edible product excludes the need of an intense sweetener as the sweetening in accordance with the present

invention is accomplished through the synergistic effect resulting from the use of a non-sweet compound, i.e. polydextrose, for sweetening the edible product containing the sweet tasting sugar compound.

The main claim has further been amended to indicate that the synergistic sweetening effect being obtained with polydextrose is independent of the presence or absence of intense sweeteners in the product. That is, the claimed method for enhancing the sweetness of an edible product excludes the need of an intense sweetener for obtaining its sweetening results. Clear support for this critical aspect of the present invention can be found on page 10 of the subject application, last paragraph:

In a preferred process according to the invention for sweetening edible products, polydextrose in a synergistically effective amount is included in the product, which contains a sweet tasting sugar compound. The edible product may also contain other sweetening agents but it should be noted that the inventive synergistic sweetening effect is obtained with polydextrose independently of the presence or absence of intense sweeteners in the product.”

As noted above, support for the amendments to the claims can be found in the originally filed disclosure. Applicant firmly believes that, as amended, the present invention is clearly defined. The remaining issue is whether or not the invention as now claimed distinguishes it from the prior art. Applicant respectfully submits that it does.

Going back to the original point presented at the beginning of this response, the sweetening enhancement produced by the method of the present invention is independent of the presence or absence of an intense sweetener and is rather based on the newly found synergistic ability of polydextrose. As such, there is no need or requirement for an intense sweetener to be present in order to achieve the sweetening effect claimed by the present invention. The prior art section of the present application discusses the use of polydextrose and more specifically the fact that, prior to the present invention, the presence of polydextrose was not known to contribute to the sweetness of the edible product. That is, the prior art clearly indicated the non-sweetness of polydextrose and that where polydextrose was used to replace sugar, more intense sweeteners were required to be used to make up for it. Thus, it was very surprising that the Applicant has

found that polydextrose has a synergistic sweetness enhancing effect on sweet tasting sugars and that the need for an intense sweetener was no longer needed where polydextrose was used.

All the Examples of the present application are based on the presence and interaction of only polydextrose and a sweet tasting sugar compound and the invention is clearly drawn to a situation where there will be no need or requirement for an intense sweetener.

It is further noted that intense sweeteners typically have a sweetness which is 100 to 1000 times as strong as natural sugars such as sucrose, fructose and the like. The sweetness enhancing afforded by the present invention would therefore be expected to drown under the impact of an intense sweetener by those skilled in the art. Thus, it should be clearly understood that the chemistry involved in the sweetness enhancing of the present invention is not connected or dependent upon the presence of any intense sweetener.

Now turning to the cited prior art, it is respectfully submitted that one skilled in the art could not expect from said prior art that polydextrose could be used to synergistically enhance the sweetness of a sugar compound such that the further use of an intense sweetener would not be required to compensate for the use of the polydextrose. This is clearly an unexpected result. That is, the synergistic sweetening effect of polydextrose on the sweet tasting sugar compound cannot be found or suggested in the prior art. As discussed below, the prior art in fact teaches away from such an effect.

Specifically, the Office Action maintained its previous rejection of claims 42-44, 46-54, 56 and 57 under 35 U.S.C. §102(b) as allegedly being anticipated by or, in the alternative, under 35 U.S.C. §103(a) as allegedly being obvious over EP 0447359 (hereinafter referred to as “Wong et al.”), JP 7067536 and U.S. Patent No. 5,525,360 (hereinafter referred to as “Yatka et al.”). The Office Action cited Wong et al. for teaching a synergistic sweetening composition comprising polydextrose, monosaccharides, and/or disaccharides; JP 7067536 for teaching the combination of polydextrose and sugar; and Yatka et al. for teaching a composition comprising polydextrose and additional sugar compounds including sucrose and maltose. In making its rejections, the Office Action further alleged that “[s]ynergism would be inherent to that of Wong et al., JP 7067536 and Yatka et al as the same components are used” and that “the concept of synergism in the sweetener art is well-known and expected.”

As was argued previously, Wong et al. teach a synergistic combination between the old type of improved polydextrose and a very specific artificial sweetener, i.e. 1-chloro-1’-

deoxysucrose, which is a synthetic compound closely related to the well-known intense sweetener sucralose. Sucralose has an inherent sweetness, which is about 600 times as high as that of sucrose.

Wong et al. note on page 3, lines 35 to 36, that each intense sweetener is chemically distinct and that each sweetener presents a different challenge in respect to its use. There is no suggestion in Wong et al. that polydextrose has any effect on the sweetness of sucrose, nor on the sweetness of any other non-intense sweeteners. To the contrary, Wong et al. note on page 2, lines 42 to 43, that because polydextrose is not sweet, intense sweeteners must be used with polydextrose. Said in a slightly different manner, Wong et al. does NOT exclude the need of an intense sweetener as does the sweetening method in accordance with the present invention. The fact that polydextrose has been found to synergistically increase the sweetness of one specific halogenated derivative of sucrose with an intense sweetness of its own in no way teaches or makes it obvious or even likely that polydextrose has any such effect on the non-halogenated mono- and disaccharides of the present invention. The claimed method of the present invention clearly excludes the need of any intense sweeteners from being added to the sweetening composition as the sweetening enhancement is accomplished by the addition of polydextrose to the sweet tasting sugar compound. As such, the present invention is distinguished from that of the prior art of Wong et al. which clearly requires the addition of an intense sweetener to achieve its sweetening effect.

Again, it should be realized that in accordance with the teachings of Wong et al., the person skilled in the art finds that the sweetness of one very specific compound, i.e. 1-chloro-1'-deoxysucrose, is affected by polydextrose. It is respectfully submitted that the skilled artisan could not in any clear and logical manner realize that polydextrose has a sweetness-enhancing effect on other sugar compounds. In fact, based on Wong et al., the opposite is true. By picking out one so specific and synthetic sugar as 1-chloro-1'-deoxysucrose, Wong et al. suggests that the synergistic effect is a specific property existing for the combination of this compound with polydextrose and that it is surprising in its own context. Nowhere in Wong et al. is it taught or even suggested of any likelihood that the same effect would be true for other compounds and other combinations.

Even more specific to the present invention, Wong et al. suggest on page 9, lines 38 to 51, that bulking agents such as sucrose, fructose, and glucose may be added into the chewing

gum composition sweetened with 1-chloro-1'-deoxysucrose. However, Wong et al. do not teach or even suggest that the polydextrose has a synergistic effect on the sweetness of the sugar bulking agent nor would the skilled person based on Wong et al. have used polydextrose for increasing the sweetness of the sugar bulking agent. The teaching of Wong et al. is clearly to use an intense sweetener to provide the sweetness that is needed. The present invention excludes the need of such an intense sweetener as the sweetening occurs through the synergistic effect of polydextrose on the sweet tasting sugar compound.

The abstract of JP 07-067536 discloses that a hard candy having a shape-retaining property can be provided by mixing 15-80 wt % of polydextrose with 20 to 85 % of a sugar or sugar alcohol. The whole invention in the JP publication relates to the shape-retaining characteristic. There is neither teaching in this disclosure nor any suggestion of synergistically enhancing the sweetness of the sugar or sugar alcohol by polydextrose.

As seen on page 10 of the subject specification and in the examples of the present application, the synergistic effect has been observed in edible products such as milk products and fruit jams, where the polydextrose has surprisingly enhanced the sugar naturally present in the edible product, i.e. lactose in the milk and fructose in the fruit. It is respectfully submitted that there is no way the skilled person based on the JP publication could have known this surprising and advantageous effect of polydextrose on sugars in edible products. The synergistic effect makes it possible to reduce the amount of sugar in the edible product in question. Reducing the sugar level has for a long time been the aim of food industry both for dietetic purposes and for the ever-increasing obesity problem in the industrialized world.

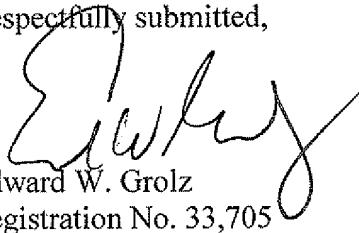
Thus, the present invention provides a solution to the problem or at least helps to reduce the problem in a manner that was not obvious to those skilled in the art.

Yatka et al. use polydextrose as a non-sweet bulking agent to replace other “bulk sweeteners” in a chewing gum. In column 3, lines 61-64, Yatka et al. disclose that when polydextrose is used to replace sucrose and syrup, the combination actually results in a lower sweetness of the product, which calls for the use of intense sweeteners such as aspartame. Thus, Yatka et al. actually teaches away from the instant invention, which is based on the surprising observation that polydextrose, in fact, increases the sweetness of sucrose. It would therefore be impossible to obtain the method of the present invention when considering the teachings of Yatka et al., either alone or in combination with the other cited references.

In summary, it is respectfully submitted that there is no such disclosure in Yatka et al., which alone or in combination with Wong et al. and/or JP 7067536 teaches or suggests to the skilled person that polydextrose can be used for enhancing the sweetness of sugars as defined by the present invention. No such teaching or suggestion in the prior art has been identified. Yatka et al. teach that polydextrose reduces the sweetness of sucrose in chewing gums. Wong et al. teach that polydextrose enhances the sweetness of 1-chloro-1'-deoxysucrose. JP 7067536 discloses that polydextrose provides low calorie and shape to candy. No matter how one tries to combine the teachings of these references, the skilled artisan would not be lead to the present invention.

In view of the above, it is respectfully submitted that the method of the present invention as now claimed is both novel and inventive in view of the cited references. No new matter has been added to the claims. The amendment merely more clearly defines the invention as has been previously discussed and distinguished from the prior art. Consequently, the rejection of the claims based on Wong et al., JP 7067536 and Yatka et al. are respectfully requested to be withdrawn. It is respectfully submitted that all the claims in the application as presently submitted contain patentable subject matter and a Notice of Allowance is earnestly solicited.

Respectfully submitted,



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